

WHAT IS CLAIMED IS:

1. An exposure apparatus setting a prescribed light exposure in exposure for forming a resist pattern with an optical system, comprising:  
at least two illuminance meters provided on the emission side of  
single said optical system;

5 average illuminance operation means operating average illuminance on the basis of measured illuminance values obtained from said illuminance meters; and

light exposure control means controlling the light exposure on the basis of information obtained from said average illuminance operation  
10 means.

2. The exposure apparatus according to claim 1, wherein  
said average illuminance operation means includes means obtaining  
said average illuminance with remaining said measured illuminance values  
except those of measured illuminance values exceeding a prescribed  
5 threshold in illuminance measurement.

3. An exposure method setting a prescribed light exposure in exposure for forming a resist pattern with an optical system, comprising:  
an average illuminance operating step of operating average  
illuminance on the basis of measured illuminance values obtained from at  
15 least two illuminance meters provided on the emission side of single said optical system; and  
a light exposure control step of controlling the light exposure on the basis of information obtained from said average illuminance operating step.

4. The exposure method according to claim 3, wherein  
said average illuminance operating step includes a step of obtaining  
said average illuminance with remaining said measured illuminance values  
except those of measured illuminance values exceeding a prescribed  
20 threshold in illuminance measurement.

5 5. A semiconductor device fabricated with an exposure method comprising an average illuminance operating step of operating average illuminance on the basis of measured illuminance values obtained from at least two illuminance meters provided on the emission side of a single optical system and a light exposure control step of controlling the light exposure on the basis of information obtained from said average illuminance operating step.

6. An exposure apparatus setting a prescribed light exposure in exposure for forming a resist pattern, comprising:

5 illuminance measuring means performing illuminance measurement before exposing an (N - 1)th (N: integer) wafer, illuminance measurement after exposing said (N - 1)th wafer and illuminance measurement during at least single exposure of said (N - 1)th wafer; and

light exposure decision means deciding illuminance for an N-th wafer from measurement results obtained from said illuminance measuring means for deciding the light exposure for exposing said N-th wafer.

7. The exposure apparatus according to claim 6, wherein said light exposure decision means includes:

5 relational expression operation means obtaining a relational expression of illuminance and an exposure time from illuminance measurement results obtained from said illuminance measuring means, and

10 first illuminance operation means obtaining illuminance at the time of starting exposure of said N-th wafer and illuminance at the time of ending said exposure from said relational expression obtained by said relational expression operation means.

8. The exposure apparatus according to claim 7, wherein said N-th wafer is provided with a plurality of shot areas, and said light exposure decision means further includes: second illuminance operation means obtaining illuminance every

5 shot of said N-th wafer, and  
exposure time operation means obtaining an exposure time every  
shot of said N-th wafer.

9. An exposure method setting a prescribed light exposure in  
exposure for forming a resist pattern, comprising:

an illuminance measuring step of performing illuminance  
measurement before exposing an (N - 1)th (N: integer) wafer, illuminance  
5 measurement after exposing said (N - 1)th wafer and illuminance  
measurement during at least single exposure of said (N - 1)th wafer; and  
a light exposure decision step of deciding illuminance for an N-th  
wafer from measurement results obtained from said illuminance measuring  
step for deciding the light exposure for exposing said N-th wafer.

10. The exposure method according to claim 9, wherein  
said light exposure decision step includes:

a relational expression operation step of obtaining a relational  
expression of illuminance and an exposure time from illuminance  
5 measurement results obtained from said illuminance measuring step, and  
a first illuminance operation step of obtaining illuminance at the  
time of starting exposure of said N-th wafer and illuminance at the time of  
ending said exposure from said relational expression obtained in said  
relational expression operation step.

11. The exposure method according to claim 10, wherein  
said N-th wafer is provided with a plurality of shot areas, and  
said light exposure decision step further includes:

a second illuminance operation step of obtaining illuminance every  
5 shot of said N-th wafer, and  
an exposure time operation step of obtaining an exposure time every  
shot of said N-th wafer.

12. A semiconductor device fabricated with an exposure method,

